The Effect of Self-Explanation Prompts on Planning in Written Composition by Second Language (L2) Postgraduate Students1

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Abstrak

Penelitian ini bertujuan untuk menginvestigasi perbedaan proses perencanaan dalam strategi menulis antara siswa yang diberikan self-explanation prompts dan siswa yang menggunakan strategy perencanaan tradisional dalam menulis argumentatif essay. Penelitian ini melibatkan 22 siswa pasca sarjana yang sedang belajar di Australia dengan Bahasa Inggris sebagai bahasa kedua. Metode analisis data yang digunakan adalah metode kombinasi yang menggunakan analisa kualitatif data maupun kuantitatif data. Data dalam penelitian ini diperoleh dari dua sumber, yaitu skrip think-aloud selama proses menulis dan rencana tertulis oleh para partisipan. Hasil penelitian mengindikasikan bahwa penggunaan self-explanation prompts dalam proses perencanaan memiliki dampak yang signifikan terhadap tiga kategori proses perencanaan, diantaranya pada proses pengelompokan ide, penciptaan ide, dan proses elaborasi ide. Akan tetapi, pengaplikasian self-explanation prompts tidak memiliki efek signifikan terhadap ketiga kategori proses perencanaan lainnya, seperti analisis topik, proses strukturisasi ide dan penentuan tujuan menulis. Oleh karena itu, dibutuhkan training yang lebih khusus dalam pengaplikasian penggunaan self-explanation prompts untuk melihat dampak lebih lanjut dari pengaplikasian prompts dalam proses menulis. Implikasi pengaplikasian self-explanation prompts dibahas lebih detail dalam artikel ini.

Kata Kunci : *self-explanation prompts,* strategi perencanaan, metode penulisan, penulisan dengan Bahasa Inggris sebagai bahasa kedua.

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Introduction

Writing is defined as one of the most complex mental activities due to its requiring activation and interaction of many cognitive processes, including long term memory, working memory, procedural and declarative knowledge, motivation, self-regulation, beliefs and attitudes (Bruning, Schraw, Norby, & Ronning, 2004). This complex of processes is needed to express, generate, and refine ideas (Roca de Larios, Manchon, Murphy, & Marin, 2008). Writing is also an integral part of contemporary education (Kirkpatrick & Klein, 2009).

One model based on cognitive research, which has had great influence in guiding research in writing is the Flower and Hayes model of writing (Bruning et al., 2004). This model has analysed writing as a problem solving activity with *three major components*: the task environment, long term memory, and working memory (Hayes & Nash, 1996). In addition, this cognitive model of writing has considered *three major writing processes* in working memory: planning, translating, and also revising.

The Planning process has been defined as constructing a context activity, generating the ideas that a writer wants to communicate by written text. In this stage, ideas are being retrieved from long-term memory to be processed in the working memory (Levy & Ransdell, 1996; Roca de Larios et al., 2008). The planning process also allows the various writing stages to be scheduled, as the writer develops composition action-plans. *The translating process* operates at a linguistic level of representation, where the pre-verbal message from the planning process is transformed into a verbal message in the written text.

The conceptual structure that is elaborated during the planning process is then grammatically encoded by retrieving the syntactic, morphological and spelling properties of words in the working memory (Levy & Ransdell, 1996; Roca de Larios et al., 2008). This process then transforms into actual motor execution, when writers write down (or type) the linguistic message.

The last process in writing has been defined as the *revision process*, which allows writers to evaluate their written text. In this stage, writers may reconsider the status of their text, perhaps engaging in correction of grammatical errors in order to produce good quality written text. All of these three major writing processes are conducted

with the involvement of the working memory (Levy & Ransdell, 1996; Roca de Larios et al., 2008). In this study it is the planning process that is the focus of attention.

However, interestingly, even though writing seems to play a crucial part in academic performance, many students have been reported as showing a lack of writing skills and produce poor quality of written texts (Roca de Larios et al., 2008). Accordingly, number of studies suggested that difficulties with writing should be managed properly, since these skills are considered as one of the most important skills to achieve in successful academic performance.

Research reveals that students, who have been taught a good method for planning and drafting text show improvements in writing skills (Hayes & Nash, 1996). The skilled writers have been found to apply more planning strategies in writing rather than less-skilled writers (Berninger, Whiteker, Feng, Swanson & Abbott, 1994; Ransdell & Levy, 1994; Bruning et al, 2004) in order to produce better quality of written texts.

The Importance of Planning Strategy in Writing

Research has found that spending time to plan is a critical activity since when writers plan more; they tend to produce more ideas and reflect more on their organisation of written text (Manchon & Roca de Larios, 2007). It has been found that having time to plan in writing influences the fluency, accuracy, and complexity of the language produced in the written texts (Kawauchi, 2005) since the planning process has been shown to control writing process and to limit the capacity of memory use while writing (Manchon & Roca de Larios, 2007).

Also, Kellogg (1988) has argued that effective planning of a writing composition leads to higher quality of documents. A study by Manchon and Roca de Larios (2007) has also found that planning has correlated with the degree to which students organise the related information into sections in the written texts.

Therefore, planning is identified as an important process to predict the holistic quality of written texts. It has also been shown that planning has been defined as a critical composing activity in the second language (L2) writing process (Manchon & Roca de Larios, 2007). Research conducted on second language learning revealed that engaging in planning in second language (L2) writing has been asso-

ciated with better proficiency in the written texts produced (Whalen & Menard, 1995).

The time spent in planning process has a strong correlation with the writing quality of second language writers (Manchon & Roca de Larios, 2007). Therefore, it is clear that the planning process in writing plays important roles in second language writing performances These latter research findings are of special interest here because it is the planning processes of second-language learners that are of interest in this research. What is not clear from the above research is the quality of specific planning processes.

This study is concerned with observing and exploring the planning processes performed by the second-language students, particularly Indonesian students, in written composition. More specifically this study is concerned with analysing the use of effects of self-explanation prompts during the planning process on the quality of planning .

Prompts use has been identified to be one of effective strategies to be applied in order to improve students' performance in planning or writing generally since several research have revealed that the prompts use has positively affected several learning strategies to some extend. *Prompts* refer to questions or hints or elicitations that aim to induce productive learning processes (Berthold, Eysink, & Renkl, 2009).

Prompts have also been defined as strategy activators for writers to activate meta-strategic learning (Schraw, 1998; Zohar & Peled, 2008), since they are effective activators in inducing the learning strategies that the learners are in principle capable of, but may not use. According to Schworm and Renkl (2007), self-explaining prompts can stimulate the active processing of learning materials and direct attention to central issues.

Prompting self-explanations in learning from worked-out examples can enhance learning outcomes (Schworm & Renkl, 2007; Wong, Lawson & Keeves, 2002). Therefore, the prompts use has been identified to help the learners to have better quality of learning.

The findings show that the prompts help the writers to produce writing with the best overall quality (holistic scores), including greater fluency (length of product), syntactic complexity (MLTU), and better quality of accuracy (percentage of correct T-units) (Way, Joiner, & Seaman, 2000).

As has been found that applying the prompts on either the learning strategy or writing strategy could help writers in improving the

quality of learning or the quality of writing, they are then predicted to be an appropriate strategy in the planning process of writing in order to help the second language writers to enhance their quality of writing.

Accordingly, this study is observing the self-explanation prompts use as a planning strategy in the planning process of the second language students' writing. In this study, the prompts use has been applied as guidance for the students in the planning process to control their cognitive process while planning in the second language writing.

It is expected that the prompts can improve students' performance in planning since it has been known that the planning process is an important step to improve students' performance in writing (Kellogg, 2001).

In this study, use of the self-explanation prompts during planning has been developed to guide the students to do better planning in preparation for written compositions that involve argumentation. The study is seeking to examine the effect of use of the prompts by second language students on the quality of planning and quantity of planning.

This involved analysing the effects of use of the prompts on the quality of six categories of planning: analysis of the question, grouping of ideas, generating ideas, idea elaboration, structuring of the arguments, and goal-setting. In addition effect of use of the prompts was observed on two categories of planning quantity, fluency and time spent in planning.

The broad research question for this study is whether the self-explanation prompts group and the control group differed in terms of the general quality of their planning in written composition for an argumentative, or persuasive, writing task. The more specific research questions are:

1. Do the self-explanation prompts group and the control group differ in terms of the use of the analysis of the question process during planning for writing?
2. Do the self-explanation prompts group and the control group differ in terms of the use of the grouping process during planning for writing?
3. Do the self-explanation prompts group and the control group differ in terms of use of the generating ideas process during planning for writing?

4. Do the self-explanation prompts group and the control group differ in terms of use of the elaboration the ideas process during planning for writing?
5. Do the self-explanation prompts group and the control group differ in terms of use of the organizing the ideas process during planning for writing?
6. Do the self-explanation prompts group and the control group differ in terms of the use of the setting of goals process during planning for writing?
7. Do the self-explanation prompts group and the control group differ in terms of quantity of text produced during planning in written composition?
8. Do the self-explanation prompts group and the control group differ in terms of the amount of the time spent in planning for written composition?

The Study

In this study, the data were gathered using two sources, data gathered from think-aloud planning and data gathered from the participants' written plans. In the think-aloud method, participants were recorded while doing planning aloud, in order to identify their concurrent processing while planning.

Participants

In this study, a convenience sampling was used by selecting participants because they were willing and available to participate in the study conducted (Creswell, 2008). Twenty-two Indonesian post-graduate students attending university in Adelaide, South Australia were recruited, with ages between 20 and 40 years old. The participants were studying in a range of faculties and they have varies time spent in Australia. This ranges of time spent in Australia between 1.5 months and 19 months.

The 22 participants (8 males and 14 females) in this study had learned English as their second language in Indonesian schools, on average for more than 8 years. Most of them had had little opportunity to use English for communicative purposes before they came to study in Australia. The participants could be considered to constitute a fairly homogeneous group in terms of their learning history and English

proficiency, based on their International English Language Testing System (IELTS) scores. No participants withdrew from the study.

Design

A mixed method observational study design was conducted in this research. The observational study design had been chosen as a method in this study because this research engaged in intensive data collection of participants' planning strategy (including think-aloud and written plan data), spending a great deal of time at the site where participants engaged in writing processes, so detailed information was able to be gathered by observation of each participant.

Both qualitative data (think-aloud and written plan data) and quantitative data (scale scores on eight planning criteria) have been gathered in this observational study design. There were two sessions of gathering data conducted, pre-training and post-training sessions. In pre-training, either control group or self-explanation (SE) prompts group was asked to plan task 1 without any intervention training as a preliminary analysis in order to ensure that both groups have equivalent performance in planning processes.

Then, in post-training, both groups were asked to plan task 2 in different ways. In this session, self-explanation (SE) prompts group was asked to plan task 2 using the self-explanation prompts and the other group was asked to plan the same task without the prompts as a control group. Data were collected from participants' think-aloud and written plans in both sessions.

Table 1.

The Study Design

	Pretraining	***Intervention***	***Post-training***
Control group	Planning task 1		Planning task 2
SE Prompts group	Planning task 1	SE Prompts training	Planning task 2

Think-Aloud Method

Think-aloud has been defined as a method, which involves recording everything that participants say (Creswell, 2008). This study has applied a concurrent report of cognitive processes by generating the participants' planning activity through use of a think-aloud procedure in order to gather think-aloud data since it was believed that it would

present a more accurate picture of participants' on-line processing in their working memories while planning. Moreover, this concurrent strategy of think aloud process was important since this study also entailed counting the actual time spent on different planning strategies in writing activities.

In this think-aloud instruction, participants were allowed to use either English or Bahasa Indonesia as the language of reporting to make them feel more comfortable in performing the planning task. Participants were given the opportunity to practice the think-aloud method by explaining aloud how to get from the current site to a building they were all familiar with.

Feedback on this practice was provided to emphasize the importance of giving a full report of what they were thinking. No modeling was provided to avoid influencing the participants' behaviour.

Procedure

The data collecting process for this study consisted of generation of the participants' think-aloud protocols while they were performing an argumentative writing task. The argumentative tasks were used in this study since the students' cognitive efforts could be optimally reflected while writing argumentative essay (Olive, Favart, Beauvais & Beauvais, 2008). There were set two argumentative tasks, taken from the official IELTS Exercise Book in order to be easily performed by second language (L2) students.

In addition, these two tasks had also been structured to be parallel because it had been expected that participants would have to make the same level of effort in performing the two tasks. The parallel tasks had been set by providing similar type of question for the participants in the first and the second stages. The two tasks involved the following questions:

First Task. "In health care prevention is better than cure." To what extent do you agree or disagree with this statement?

Second Task. "In parenting fatherhood ought to be emphasized as much as motherhood." To what extent do you agree or disagree?

Self-Explanation Prompts Group Instructions

Participants in the self-explanation prompts (SE) group were asked to use the self-explanation prompts while they were planning the second task. Participants in this group were given eight questions as prompts that were designed to guide them in carrying out their

planning strategies for the second task.

The prompts were derived by considering the nature of the writing task and using the account of an experienced writer about what needed to be considered in planning a response for such a task. The following prompt questions were

1) *What does the question ask you to do?*
2) *What are the key words in the question?*
3) *How are these key words related?*
4) *What is your answer or opinion about this question (Do you agree/disagree)?*
5) *What arguments could you support your opinion?*
6) *How are your arguments related to each other?*
7) *What should be the order of your arguments?*
8) *Do your arguments answer the question?*

By applying these question prompts as a planning strategy, it was expected that the prompts would affect some cognitive processes in planning that relate to the quality of planning. The expected relationship between the prompts and the cognitive processes in planning is presented in the Table 2. The instructions for the self-explanation group, translated from Bahasa Indonesia into English were:

"I'd like you to describe your planning strategies for the writing task that we are going to give you now, and to use and consider the self-explanation prompts that have been given as guidance for you as you plan. While you plan the composition, I would like you to say aloud anything and everything that goes through your mind.

You have to do everything that you would normally do when writing a planning strategy composition, the only difference being that today you are going to do it talking aloud. You may use any language that you normally use when writing. You will have a maximum of 1 hour to complete the task."

Control Group Instructions

The participants in the control group were asked to plan on both occasions using their own planning procedures without any specific interventions. The instructions for pre test and for the control group, translated from Bahasa Indonesia into English were

"I'd like you to describe your own planning strategies on the task that we are going to give you now. While you are doing your planning, I would like you to say aloud anything and everything that goes through your mind.

You have to do everything that you would normally do when writing a planning strategy composition, the only difference being that today you are going to do it talking aloud. You may use any language that you normally use when writing. You will have a maximum of 1 hour to complete the task."

Coding analysis

Qualitative and quantitative data were gathered from transcripts of participants' think-aloud protocols and written plans in this study.

Coding

The coding process for analysis of think-aloud data was carried out using Microsoft *Excel* software. The data were coded using a set of codes based on cognitive theories of writing and theories of human problem solving.

Transcripts were coded into eight coding categories related to planning strategies: six categories for the quality of planning and two categories for the quantity of planning (Hayes & Flower, 1980; Tsivacou, 1996).

The definition and standard of criteria for categorization or coding method are presented on Table 3 and Table 4 respectively. The scales established for codes differ in a quantitative way. It is argued that there is a quantitative element to quality and this element is the focus in this study.

The scales score represent differences in the extent to which a process was used in a more or less comprehensive manner. A more comprehensive use of a process is one that involves greater transformation of information. Higher scores were allocated to more comprehensive processing in relation to each code.

The quantitative element in ratings of quality is recognized in the SOLO ratings of quality of learning derived by Biggs and Collis (1982). As an example element in this study consider the analysis of question category. The ratings of quality of analysis of question suggest that score 5 reflects more comprehensive processing compared to score 1.

Tabel 2.
The relations of the prompts and the cognitive processes in planning

Prompts/ Categories	Analysis of Question	Grouping of Ideas	Generating of Ideas	Elaboration	Structuring the Arguments	Setting Goals
1. What does the Question ask you to do?	✔		✔			
2. What are the key words in the question?	✔					
3. How are these key words related?		✔				
4. What is your answer or opinion about this Question Do you agree/ disagree)?			✔	✔		✔
5. What arguments could you support your opinion?			✔	✔		
6. How are your arguments related to each other?	✔				✔	
7. What should bethe order of your arguments?					✔	
8. Do your arguments answer the question?						✔

Written plan data

Similar to the coding process for analysis of think-aloud data resource, the coding process for analysis of written plan data resource was also coded into eight coding categories of standard criteria for categorization. The quality of written plans was assessed based on the

Table 3.
Definitions of codes

Planning Processes	*Definition*
Analysis of Question (Keywords identified)	Identification and selection of the keywords in the question statement.
Grouping of Ideas (Number of clusters and use of labels for clusters)	Selecting and making higher-order clusters of ideas and labeling of these clusters.
Generating Ideas (Number of ideas)	Generation of ideas involves retrieving or creating ideas related to the question during planning
Elaboration (Degree of and complexity of adding to ideas)	Elaboration occurs when participants add to, or elaborate upon, the detail of ideas during planning. This elaboration can be simple or more complex
Structuring the arguments (Degree of structure)	Whether the participants create any sequence between ideas during planning in order to make a comprehensive and structured written plan.
Goal Setting (Answer analysis, does the plan answer the question?)	Whether the participants set out specific objectives for the writing task. This could include answering the question set for the writing task or consideration of the audience or features of the texts
Fluency (How many words of written plan)	This is a measure of production of verbal reports or written planning that is distinct from the above measures of quality (Kellogg, 1994). To measure this, the number of words in the think-aloud and in the written plan will be counted.
Time spent in planning	The amount of time in which writers spent in the planning processes. This started from analysis of the question and stopped when participants indicated that they had completed their plans to answer the question for the essays.

Table 4.

Categorization criteria for quality of planning process

Planning Processes	1	2	3	4	5
Analysis of Question (Keywords identified)	Has not identified explicitly any of the keywords in analysing questions	Has identified explicitly one or two of the keywords in analysing question	Has three or four explicit keywords in analysing question	Has identified five explicit keywords in analysing question	Has all explicit keywords in analysing question
Grouping of Ideas (Number of clusters and use of labels for clusters)	No grouping, only collections of ideas	Simple grouping of ideas into 1 or 2 clusters	Simple grouping of ideas into 1 or 2 clusters, plus use of a label for a cluster.	Simple grouping of all ideas plus generation of labels for all clusters	Grouping of all ideas and generation of all labels for the clusters, plus at least one third-order label for the clusters
Generating Ideas (Number of ideas)	(1 – 2 ideas)	(3 – 5 ideas)	(6 – 10 ideas)	(11 – 15 ideas)	(16 + ideas)
Elaboration (Degree of and complexity of adding to ideas)	No elaboration of the ideas, no supportive details, no examples	Simple elaboration for 1 key idea, involving description or translation or use of examples of the ideas	Simple elaboration for 2 or more key ideas involving description or translation or use of examples of the ideas	Complex elaboration for 1 key idea. This includes specification of a definition and/ or application of the idea	Complex elaboration for 2 or more key ideas and includes elaboration of key ideas plus definition and/ or application of the idea
Structuring The Arguments (Degree of structure)	Does not identify any parts of the written response , such as introduction, body and conclusion	Does not identify any parts of the written response, such as introduction, body, and conclusion, but order of ideas is discussed	Has identified one part of the composition structure (introduction, body, conclusion)	Has identified two parts of the composition structure (introduction, body, conclusion)	Has identified all three of the composition structure (introduction, body, conclusion)
Goal Setting (Answer analysis, does the plan answer the question?)	Does not establish any objective for the plan	Follows the sequence set out in the question without any explicit reference to answering that question	Explicitly provides s general answer to the question (e.g., I agree) without providing any expansion on this answer	Explicitly provides s general answer to the question (e.g., I agree) and provides an expansion on this answer	
Fluency (How many words of written plan)					
Time spent in planning					

codes used for the think-aloud data. Nevertheless, fluency and time spent were not set into scale category since there were no specific criteria to define these categories into several scales.

The final data used in the analysis were generated from the combination of the think-aloud and written plan sources. Therefore, the highest rating for each code from either source was taken as the rating for that code for that participant.

This was been done to give the participant the maximum credit for the quality of each planning process. Therefore, the quality of planning score was taken from the participants' best performance. After all final data were gathered, categorized or coded, then the data were analysed by using statistical tests to identify any the differences in the scores for both quality and quantity between pre-training and post-training among two groups.

Reliability checking for coding

Reliability checking of coding was done once the categories had been decided, by training another researcher in use of the codes. This independent observer was asked to code a sample of the clean transcripts and this coding was then compared to that of the researcher.

The level of agreement between two researchers was estimated using Cohen's kappa index of agreement in SPSS. *A Cohen's unweighted analysis* was applied to check the reliability in this study. This statistic has a range between 0 – 1 and the result would be considered as satisfactory when it was > 0.07 (Pallant, 2007). The result in this study was that the Kappa value was 0.88. This means that coding analysis in this study is of acceptable reliability.

Quantitative data analysis was carried out to investigate whether the self-explanation prompts used in planning affected the quality of the planning process, the amount of think-aloud and written text produced (referred to here as fluency) and time spent in planning. *SPSS version 17* was used for descriptive, non-parametric, and other related analysis.

Preliminary data analyses

The design of the study included the random allocation of participants to groups which is designed to control for the influence of variables related to differences among the groups that were not the focus of the experimental manipulation. Nevertheless, preliminary

analyses of these variables was undertaken to provide information that would be relevant to the interpretation of differences between the groups arising from that experimental manipulation.

IELTS Score

IELTS scores have been taken as a representation of participants' English proficiency level. The analysis to investigate whether there were significant differences in IELTS scores, including scores of each IELTS' category of the two groups was done using the non-parametric *Mann-Whitney test,* the results of which are shown in Tables 5 and Table 6.

The analysis results revealed that there was no statistically significant difference between two groups on any category of IELTS scores. These results from the bottom row of the three tables above indicated that participants in both groups had similar levels of IELTS proficiency. Therefore, it is suggested that IELTS scores did not have differential influences on the quality of planning produced in both groups.

Table 5.
Mann-Whitney Test Results of Ranks of IELTS Scores

Ranks				
	Group	**N**	**Mean Rank**	**Sum of Ranks**
IELTS Overall	Control	10	11.25	112.50
	SE Prompts	12	11.71	140.50
	Total	22		
IELTS Writing	Control	10	11.55	115.50
	SE Prompts	12	11.46	137.50
	Total	22		
IELTS Reading	Control	10	11.60	116.00
	SE Prompts	12	11.42	137.00
	Total	22		
IELTS Listening	Control	10	10.50	105.00
	SE Prompts	12	12.33	148.00
	Total	22		
IELTS Speaking	Control	10	11.40	114.00
	SE Prompts	12	11.58	139.00
	Total	22		

Table 6.
Mann-Whitney test results of test statistics of IELTS scores

Test Statisticsb					
	IELTS Overall	**IELTS Writing**	**IELTS Reading**	**IELTS Listening**	**IELTS Speaking**
Mann-Whitney U	57.500	59.500	59.000	50.000	59.000
Wilcoxon W	112.500	137.500	137.000	105.000	114.000
Z	-.178	-.036	-.068	-.676	-.068
Exact Sig. [2*(1-tailed Sig.)]	.872a	.974a	.974a	.539a	.974a

Length of Study in Australia

Longer periods of study in Australia was predicted to be associated with greater opportunity to learn language skills and this might be associated with higher quality of planning for written composition. The analysis of length of study in Australia was also done using the non-parametric *Mann-Whitney U* test, the results of which are shown in Tables 7 and Table 8 below.

Table 7.
Mann-Whitney Analysis Results of Ranks of Length of Study

Ranks				
	Group	**N**	**Mean Rank**	**Sum of Ranks**
Length of Study	Control	10	11.5	115
	SE Prompts	12	11.5	138
	Total	22		

Table 8.
Mann-Whitney Analysis Results of Test Statistics of Length of Study

	Length of Study
Mann-Whitney U	60
Wilcoxon W	138
Z	0
Exact Sig. [2*(1-tailed Sig.)]	1.000a

The tables above indicated that there was no significant difference between the groups in length of time involved in study in Australia. Therefore, the length of study in Australia was believed not to have a systematic influence on any differences in the scores for quality of planning produced by the groups.

These two preliminary analysis results suggested that both groups were comparable in terms of English proficiency. These two variables might have an impact on planning, but the analysis here suggests that the two groups were comparable in relation to these variables.

Pre-training profiles of groups on planning processes

This analysis was designed to examine any differences between the groups in the levels of the planning processes prior to training, before the training instructions were provided. The results of *Mann-Whitney U* analysis that are presented on the Table 9, 10 and Table 11 reveal that there was no statistical significant difference for any category of planning processes between the self-explanation group and the control group in the pre-training session.

Table 9.
Descriptive Analysis of Pre-Training Profiles of Groups

Descriptive Statistics						
Categories	**Control Group (N = 10)**			**SE Prompts Group (N=12)**		
	Mean	**Std. Dev.**	**Median**	**Mean**	**Std. Dev.**	**Median**
Pre Analysis of Question	4.0	1.05	4.0	2.9	1.51	3.0
Pre Grouping of Ideas	2.3	.82	2.5	2.3	.65	2.0
Pre Generating of Ideas	4.5	.97	5.0	4.4	.51	4.0
Pre Elaboration	2.1	1.10	2.0	3.7	.49	4.0
Pre Structuring The Arguments	2.8	1.62	2.0	3.3	1.60	3.0
Pre Goal Setting	3.1	.57	3.0	3.0	.60	3.0
Pre Fluency	297	225.03	219	293	146.29	246
Pre Time Spent	5.27	3.24	5.27	6.62	2.63	6.81

Table 10.
Ranks analysis of pre-training profiles of groups

	Group	N	Mean Rank	Sum of Ranks
Pre Analysis of Question	Control	10	14.00	140.00
	SE Prompts	12	9.42	113.00
	Total	22		
Pre Grouping of Ideas	Control	10	11.85	118.50
	SE Prompts	12	11.21	134.50
	Total	22		
Pre Generating of Ideas	Control	10	12.85	128.50
	SE Prompts	12	10.38	124.50
	Total	22		
Pre Elaboration	Control	10	10.80	108.00
	SE Prompts	12	12.08	145.00
	Total	22		
Pre Structuring the Arguments	Control	10	10.50	105.00
	SE Prompts	12	12.33	148.00
	Total	22		
Pre Goal Setting	Control	10	12.00	120.00
	SE Prompts	12	11.08	133.00
	Total	22		
Pre Fluency	Control	10	10.60	106.00
	SE Prompts	12	12.25	147.00
	Total	22		
Pre Time Spent	Control	10	9.40	94.00
	SE Prompts	12	13.25	159.00
	Total	22		

Table 11.
Mann-Whitney U analysis of pre-training profiles of groups

Categories	Mann-Whitney U	Z	Exact Sig. [2*(1-tailed Sig.)]
Pre Analysis of Question	35.000	-1.781	.107a
Pre Grouping of Ideas	56.500	-.257	.821a
Pre Generating of Ideas	46.500	-1.014	.381a
Pre Elaboration	53.000	-.538	.674a
Pre Structuring the arguments	50.000	-.680	.539a
Pre Goal Setting	55.000	-.401	.771a
Pre Fluency	51.000	-.594	.582a
Pre Time Spent	39.000	-1.385	.180a

Moreover, the statistical analysis also indicated that there was no statistically significant difference on the quantity of text produced during planning (Fluency), or in time spent in planning at this pre-training occasion.

The analyses of pre-training scores indicated that prior to the training the planning profiles of the groups were comparable, suggesting that the random allocation to groups procedure was effective.

Post-Training Profiles Of Groups On Planning Processes

The post-training profiles of the two groups on each of the planning processes are compared in these analyses. The analysis results on the Table 12, 13, and 14 showed that there were statistically significant differences between the groups on three planning processes: grouping of ideas, generating of ideas, and elaboration. The self-explanation prompt training was not associated with differences between the groups on the other planning processes.

The results of this analysis for the Fluency and Time Spent measures also revealed that there were no statistically significant differences between the groups on these measures. Therefore, it might be argued that participants in both groups' had similar opportunity in terms of length of time and amount of words to produce their plans.

Table 12.

Descriptive Analysis of Pre-Training Profiles of Groups

Descriptive Statistics						
Categories	**Control Group (N = 10)**			**SE Prompts Group (N=12)**		
	Mean	**Std. Dev.**	**Median**	**Mean**	**Std. Dev.**	**Median**
Post Analysis of Question	3.9	1.37	4.5	3.9	1.24	4.0
Post Grouping of Ideas	2.4	.70	2.5	3.6	1.08	3.0
Post Generating of Ideas	4.2	.92	4.0	4.9	.29	5.0
Post Elaboration	2.3	1.25	2.0	3.8	.58	4.0
Post Structuring the arguments	2.9	1.91	2.5	3.1	1.62	2.5
Post Goal Setting	2.9	74	3.0	3.2	.39	3.0
Post Fluency	216.0	110.67	202.5	276.3	123.15	274.5
Post Time Spent	5.83	1.78	6.21	7.28	3.49	7.66

Table 13.
Ranks Analysis Of Post-Training Profiles Of Groups

Categories	Mann-Whitney U	Z	Exact Sig. [2*(1-tailed Sig.)]
Post Analysis of Question	59.0	-.070	.974a
Post Grouping of Ideas	24.5	-2.583	.017a
Post Generating of Ideas	28.5	-2.549	.036a
Post Elaboration	21.0	-2.764	.009a
Post Structuring the arguments	54.5	-.378	.722a
Post Goal Setting	51.0	-.884	.582a
Post Fluency	40.0	-1.319	.203a
Post Time Spent	42.0	-1.187	.254a

Table 14.
Ranks Analysis of Post-Training Profiles of Groups

	Group	N	Mean Rank	Sum of Ranks
Post Analysis of Question	Control	10	11.60	116.00
	SE Prompts	12	11.42	137.00
	Total	22		
Post Grouping of Ideas	Control	10	8.35	83.50
	SE Prompts	12	14.13	169.50
	Total	22		
Post Elaboration	Control	10	7.60	76.00
	SE Prompts	12	14.75	177.00
	Total	22		
Post Structuring the arguments	Control	10	10.95	109.50
	SE Prompts	12	11.96	143.50
	Total	22		
Post Goal Setting	Control	10	10.60	106.00
	SE Prompts	12	12.25	147.00
	Total	22		
Post Fluency	Control	10	9.50	95.00
	SE Prompts	12	13.17	158.00
	Total	22		
Post Time Spent	Control	10	9.70	97.00
	SE Prompts	12	13.00	156.00
	Total	22		

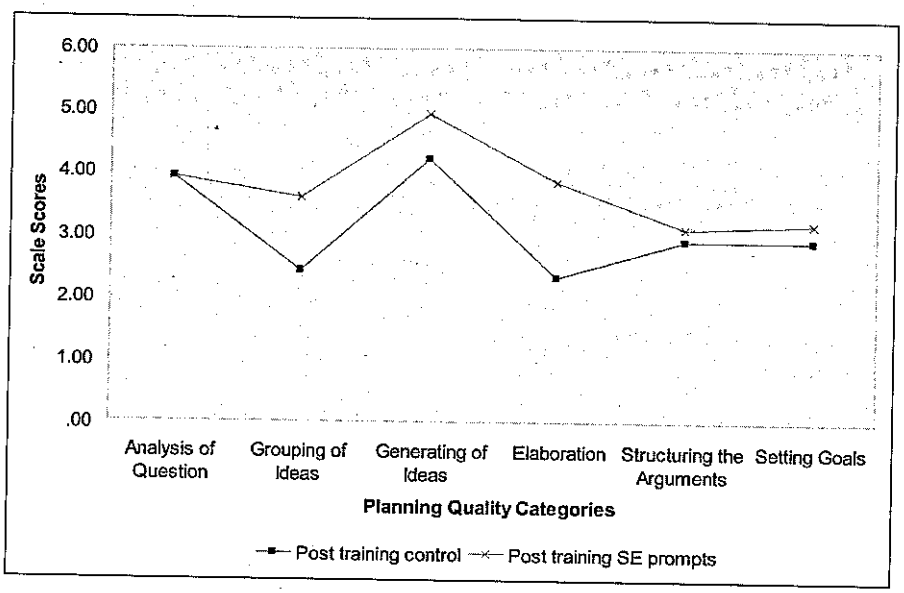

Figure 1.
Mean Post-Training Scores Of The Two Groups
On Planning Quality

Figure 1 shows in graphical form the comparison of mean scores in post training occasion between control and self-explanation groups on the six categories of planning processes. This figure reflects the differences between the two groups' scores for three planning processes, grouping of ideas, generating of ideas, and elaboration.

Statistical Analysis of Effect Sizes

The formula to assess the effect size in this study was {r = z/ square root of N (N referred to total number of cases) } (Pallant, 2007). The effect sizes for the statistically significant effects in this study are presented on the Table 15.

Table 15.
Statistical Analysis Results Of Effect Sizes

Categories	Z	N	Effect Sizes (r)
Post Grouping of Ideas	-2.583	22	-0.55
Post Generating of Ideas	-2.549	22	-0.54
Post Elaboration	-2.764	22	-0.59

The r value, which represented the statistical analysis results of effect sizes in this study, showed that each category had an r value of approximately 0.5. These results were considered a medium effect size using Cohen's rules of thumb of 0.20 = small, 0.50 = medium, and 0.80 = large (Pallant, 2007). Thus it can be concluded that these are differences that are also of practical significance (Thompson, 2008), worthy of note for researchers and teachers with an interest in planning for writing.

Discussion and Implications

The statistical analysis results in this study indicate that there were statistically significant differences between the self-explanation group and the control group in the quality of planning, specifically on the grouping of ideas, generating ideas, and elaboration processes. This means that the participants with the self-explanation prompts tended to produce better quality of planning in terms of these three processes compared to the participants without the prompts.

The improvement of the quality of planning has particularly been revealed in grouping of ideas process. This suggests that prompt questions were effective in guiding the self-explanation prompt group to do more clustering of the ideas. The self-explanation prompts' training has successfully guided writers in the self-explanation group to make more comprehensive connections among their ideas. That has been shown to be of importance for development of good quality written essays (Kellogg, 1988).

The specific question prompts also have been predicted to successfully activate the network of ideas in writers' memories. This is seen to be helpful for writers so that they can produce schemata for their plans, which is important because schemata are identified as a mental framework of comprehension (Bruning et al., 2004). Therefore, prompts use in planning seems to help the writers to create more relational links in order to support main ideas in their plans.

The prompt questions also appear to have guided the participants to generate more ideas while they were planning their responses to the post-training topic. This effect could arise is because the prompts can affect the writers' processing in working memory enabling more extensive retrieval of relevant information from long-term memory. The specific question prompts are also able to activate the executive control system in writers' working memory. This system is argued to be involved in selecting the relevant information, planning,

and transfer information to long-term memory (Bruning et al., 2004). Consequently, the prompts use in the planning processes could help the writers to select the relevant information from their memories in order to generate more relevant ideas. The activation of more ideas provides the opportunity for students to generate further links among relevant ideas.

In addition, the use of prompts has significantly improved the elaboration performance in the planning processes. The participants with the prompts were rated as producing a better quality of elaboration than the participants without the prompts. The improvement is predicted because the prompt questions can lead the participants to relate their ideas by retrieving and making connection between the information in the long-term memory and then adding the information into working memory to be processed while planning to develop more complex and better ideas in their written plan.

The prompts use has been identified to successfully stimulate the writers not only to do chunking of ideas, but they are also to retrieve and elaborate these ideas. In this way the prompts might be seen to have effects on the loops of processing between long-term memory and the working memory. A prompt acts as a cue that results in activation of ideas in long-term memory. These activated ideas are then are used in working memory where more relationships can be established between ideas, which in turn could act as cues for searching of long-term memory.

In this study, it can be seen that even though the use of self-explanation prompts use has not been related to quality of writing, it can foster the writers to generate more ideas, to elaborate these ideas and to group the ideas into related clusters during planning.

Therefore, it is expected that a better quality of writing will be produced by creating better quality of planning since numbers of previous studies have found that the quality of final text was strongly correlated with the quality and quantity of their initial planning (Spivey & King, 1987 cited in Hayes & Nash, 1996; Kellogg, 2001; Kirkpatrick & Klein, 2009). Nevertheless, no significant differences between groups were been found in the other three processes, analysis of question, structuring the arguments and setting goals processes.

One reason suggested for this outcome for the analysis of the question, and setting of goals processes is that the task question for an argumentative essay had already mentioned the keywords explicitly, and so had a strong effect on setting the goal for the activity.

Perhaps the participants were able to identify the keywords immediately after reading the questions even without using the prompts. These prompts, in the way that they have been used here, were not strong enough to guide the participants to structure their arguments.

This is because the prompts do not explicitly ask the writers to structure their arguments. Instead, the prompt questions have only asked the writers to order the ideas. Therefore, it is predicted that explicit instruction is needed in order to guide participants structuring their arguments to be a concise written plan.

The prompts are obviously not having any impact on the quality of structuring the arguments, so the writers in the two groups did not differ in the way they organised their ideas into structured plans. The more explicit training and detailed practice strategy of self-explanation prompts training in this study was expected to improve the quality of planning in terms of structuring the arguments and lead to a better quality of written texts.

This is an area of planning that should be given further attention, because there still seems to be considerable scope for improvement in this structuring of a response among the students in this study. It seems likely that a more focused, longer training regime will be necessary to produce improvements in this process. These processes might be given less explicit attention than they should be.

In this study, the lacks of statistical differences between the groups in the time spent in planning, and in the number of words produced, were important for control purposes. The participants in the two groups have spent a similar length of time doing planning and produced similar amounts of text. This means that the use of prompts is not associated with extra time, so extra time, or extra text, cannot be seen as an explanation for the effects observed.

Therefore, it is suggested that the self-explanation prompts can be applied in students' learning strategy in order to improve the quality of plan in writing. The prompts can be used as guidance, particularly for the L2 students as in this study, to improve the planning performance in writing.

The self-explanation prompts strategy can be applied in schools as guidance for teachers to help students while writing, particularly writing argumentative essays. It can then be expected that good quality planning can produce a good quality of writing.

In general, the results of this study provide an empirical evi-

dence to support the role that the self-explanation prompts play in planning for writing. It is also important to note that there were three other important planning processes that were not influenced by the self-explanation prompting procedure.

The positive effects that emerged from the study were obtained with relatively brief training and without requiring significantly more time or number of words. An additional point of note in the study is that it was possible to reliably identify six key processes in planning. The use of these categories has reinforced the importance of examining planning processes in detail.

The approaches how to collect the data for the study can be developed as future studies. Future studies should investigate why the self-explanation prompts use does not positively affected the other three categories of the quality of plans. In this respect further studies probably should apply a more explicit training instruction for some processes in planning, including giving students detailed practice in use of the prompts, instead of just using a work sheet containing the self-explanation prompt questions.

Further study should consider ways to modify the prompt questions in order to see whether there will be positive impacts on those three remaining categories. Future studies should also investigate use of this planning procedure in different groups of students at school level or in university.

The simplicity of the procedure suggests that it could be used with primary school level students. Finally this study also suggests that the future studies should investigate the impact of the self-explanation usage not only on the quality of planning, but also on the quality of writing.

Conclusion

The purpose of this study was to see the impact of the self-explanation use on the quality of planning performed by the second language (L2) post-graduate students. From the findings of this study, it can be concluded that the use of self-explanation prompts has positively affected the students' quality of planning on the three important categories, generating ideas, grouping ideas, and elaboration categories.

This instruction could easily be used with students at other levels of education.

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